

WORLD INTELLECTUAL PROPERTY ORGANIZATION



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCI)

(51) International Patent Classification 6: WO 98/00170 (11) International Publication Number: A61K 47/36, 9/22 A1 (43) International Publication Date: 8 January 1998 (08.01.98) PCT/NL97/00374 (81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, (21) International Application Number: BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, (22) International Filing Date: 1 July 1997 (01.07.97) GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, (30) Priority Data: l July 1996 (01.07.96) KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, 96201821.4 EP (34) Countries for which the regional or CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, international application was filed: GB et al. 22 November 1996 (22.11.96) PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN,. ML, MR, NE, SN, TD, TG). (71) Applicant (for all designated States except US): UNIVER-**Published** SITEIT UTRECHT [NL/NL]; Sorbonnelaan 16, NL-3584 CA Utrecht (NL). With international search report. (72) Inventors; and (75) Inventors/Applicants (for US only): HENNINK, Wilhelmus, Everhardus [NL/NL]; Zuidplaslaan 120, NL-2743 CZ Waddinxveen (NL). VAN DIJK-WOLTHUIS, Wendelmoed, Nelletha, Eleonora [NL/NL]; Van Swietenstraat 9, NL-2334 EA Leiden (NL). (74) Agent: SMULDERS, Th., A., H., J.; Vereenigde Octrooibureaux, Nieuwe Parklaan 97, NL-2587 BN The Hague (NL).

(54) Title: HYDROLYSABLE HYDROGELS FOR CONTROLLED RELEASE

(57) Abstract

The present invention relates to a biodegradable hydrogel comprising bonds which are hydrolysable under physiological conditions. More particularly, the hydrogel consists of two interpenetrating polymer networks interconnected to one another through hydrolysable spacers. In addition, the invention relates to a method for the preparation of a hydrogel, wherein macromolecules, e.g. polymers, which contain bonds which are hydrolysable under physiological conditions, are cross-linked in an aqueous solution.